* NOTICES *

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2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the disposable diaper of a trousers mold.
[0002]
[Description of the Prior Art] The elastic member prolonged in the direction of the circumference of a drum of the disposable diaper of the trousers mold indicated by JP,7-236650,A has the rate of expanding of the part which laps with an absorptivity core to the real target of less than 1.3 times at the condition of not elongating, and is pasted up on the rear-face sheet. The rate of expanding is 1.3 or more times, and the elastic member of the part prolonged from the side edge of a core to the method of outside is pasted up on the rear-face sheet.
[0003] In order to make much gathers from the disposable diaper of the trousers mold indicated by JP,7-44945,B to the field to which the absorptivity core has been arranged, two or more circumference elastic members of a drum are arranged.
[0004] In the disposable diaper of the trousers mold indicated by JP,9-84826,A, the elastic member of the shape of two or more yarn prolonged in the direction of the circumference of a drum is in contact with the edge section of an absorptivity core from the outside of a core.
[0005]
[Problem(s) to be Solved by the Invention] It is teaching that invention given in said JP,7-236650,A can prevent accordion-fold [of a core] and the location gap which are produced when an elastic member contracts in the part which is crossing the absorptivity core by changing an elastic member into the condition of not elongating, in the part which laps with a core. However, with the diaper concerning this invention, since the elastic member of the part which crosses a core has joined to the rear-face sheet in the state of un-elongating substantially, in this part, operation of the elongated elastic member pressing a core and sticking a wearer is not acquired. So, in this diaper, the leakage prevention effectiveness by a core sticking to a wearer may become scarce. Moreover, there is complicatedness of changing an elastic member partially into the condition of not elongating, or changing it into an expanding condition in a diaper production process in this invention.
[0006] Even if invention given in said JP,7-44945,B is indicating the effectiveness of making a wearer stick an absorptivity core, it is indicating nothing about how an elastic member should be arranged in the circumference region of a drum. When that makes gathers to the field to which the absorptivity core has been arranged also as ****, smoothness may be lost to the feel of a diaper, or gathers arise also to an absorptivity core, it is hard coming to stick a core to the body, and it may become the hindrance of prompt absorption of body fluid.
[0007] In invention given in said JP,9-84826,A, if it is going to suppress the curvature broadly even if the edge section of a core can suppress curving in the direction estranged from a wearer, there is complicatedness on manufacture that many elastic members must also be arranged in the edge section.
[0008] It is offer of the disposable diaper of the trousers mold which can solve many problems of said conventional technique at once which this invention considers as a technical problem.
[0009]
[Means for Solving the Problem] In order to solve said technical problem, a premise [invention / this] is the following trousers mold disposable diaper.

[0010] It consists of a liquid permeability surface sheet, a non-liquid-permeable nature rear-face sheet, and an absorptivity core that intervenes among both [these] sheets. It has the circumference region of a forward fuselage assembly, a circumference region of a back drum, and the length-from-the-crotch-to-the-cuff region located between the circumference regions of both [these] drums. The side edge sections of the circumference region of said order drum join, and circumference opening of a drum and circumference opening of a foot of a pair are formed. The circumference elastic member of the 1st drum and the circumference elastic member of a foot extend in the state of expanding along the periphery of circumference opening of said drum, and each circumference opening of a foot. At least in one side of the circumference region of said order drum The disposable diaper of the trousers mold with which the circumference elastic member of the 2nd drum of two or more articles which crosses said core has extended in the state of expanding between the edges-on-both-sides sections of the circumference region of the drum concerned.

[0011] In this premise, the place by which this invention is characterized is as follows. Each expanding stress of the circumference elastic member of the 2nd drum of two or more of said articles is lower than which expanding stress of the circumference elastic member of said 1st drum, it joined to said rear-face sheet in the part which crosses this core and is prolonged from each edges on both sides of this core to the method of outside in the external surface side of said core, and it is separated from said rear-face sheet and core between the edges on both sides of this core.

[0012] It is as follows when the desirable embodiment of this invention is illustrated.

(1) The circumference elastic member of said 2nd drum is joined to said rear-face sheet only [near the part which the side edge sections of the circumference region of said order drum join].

(2) Said rear-face sheet is the film of thermoplastic synthetic resin, and the circumference elastic member of said 2nd drum has joined to the inside of said film.

(3) Said rear-face sheet consisted of a film of thermoplastic synthetic resin, and a nonwoven fabric joined to the external surface of said film, and the circumference elastic member of said 2nd drum was located between said films and nonwoven fabrics, and has joined to either the external surface of said film, and the inside of a nonwoven fabric.

(4) The inside of said rear-face sheet has joined to the external surface of said core.

(5) The circumference elastic member of said 2nd drum is the band-like thing which has width of face of 3-20mm. (6) the circumference region of said order drum is alike, respectively, said core has a front end edge and a back end edge, and the circumference elastic member of said 2nd drum is direct and indirect near [one / at least] said order edge -- it has covered in one of modes.

(7) The gar rhe stiffness criteria of said core are 0.5-2g, and the sum total of the expanding stress of the circumference elastic member of said 2nd drum is 100-230gf.

(8) It is parallel to the circumference elastic member of said 2nd drum, and the 3rd elastic member which crosses said core is arranged in the state of expanding in said length-from-the-crotch-to-the-cuff region.

[0013]

[Embodiment of the Invention] It is as follows when the detail of the disposable diaper of the trousers mold concerning this invention is explained with reference to an attached drawing.

[0014] The disposable diaper 1 of the trousers mold shown in drawing 1 with the partial fracture perspective view consists of a liquid permeability surface sheet 2 which consists of a nonwoven fabric of a thermoplastic synthetic fiber, a non-liquid-permeable nature rear-face sheet 3 which consists of a film of thermoplastic synthetic resin, and both [these] the sheets 2 and the absorptivity core 4 which intervenes among three, and has the circumference region 6 of a forward fuselage assembly, the circumference region 7 of a back drum, and both [these] the regions 6 and the length-from-the-crotch-to-the-cuff region 8 located among seven. In the joining region 9 intermittently located in a line in overlap and the vertical direction in the shape of joining the palms together by each of the edges-on-both-sides section, it joins mutually, and the circumference regions 6 and 7 of an order drum form the circumference opening 11 of a drum, and the circumference opening 12 of a foot of a pair. In the circumference regions 6 and 7 of an order drum, and the length-from-the-crotch-to-the-cuff region 8, the front rear-face sheets 2 and 3 extended from the edge of a core 4 to the method of outside, and each other are joined through hot melt adhesive 13 in overlap and the periphery section of a diaper 1.

[0015] a diaper 1 -- the circumference opening 11 of a drum, and the circumference opening 12 of a foot -- it has the circumference elastic member 16 of a drum prolonged along each periphery, and the circumference elastic member 17 of a foot. These elastic members 16 and 17 were located between the front rear-face sheet 2 and 3, and are joined in the state of expanding through adhesives which are different from said adhesives 13 or this in one [at least] inside of these sheets 2 and 3.

[0016] A diaper 1 has the auxiliary elastic member 21 (21B, 21C, --) of two or more articles prolonged in the direction of the circumference of a drum at least in parallel with one side of the circumference regions 6 and 7 of an order drum again. Rather than any of the circumference elastic member 16 of a drum, each of the auxiliary elastic member 21 has low expanding stress, and is crossing the core 4 to the external surface side. In the example of illustration, the auxiliary elastic members 21B, 21C, and 21D of Sanjo crossed the core 4 between the inside of the rear-face sheet 2, and the external surface of a core 4, and are prolonged even in the side edge section of a diaper 1. a diaper 1 -- the circumference regions 6 and 7 of an order drum -- when it is alike, respectively and has the auxiliary elastic member 21, in the vertical direction of a diaper 1, a location differs from the case where those members 21 make a location the same in the vertical direction of a diaper 1, and are presenting annular in the diaper side edge section by overlap and its member 21 overlapping, and it may not be presenting annular

[0017] In the part which has extended from the side edge 23 of a core 4 to the method of outside, it joined to the inside of the rear-face sheet 3, and, in a more desirable case, the extending part has joined the auxiliary elastic member 21 by adhesives 25 and/or the joining region 9 only in the side edge section of a diaper 1 at the inside of the rear-face sheet 3. Moreover, the auxiliary elastic member 21 is not joined to the rear-face sheet 3 and a core 4 among the side edges 23 and 23 of a core 4.

[0018] Drawing 2 is drawing showing the important section of the II-II line arrowed cross-section of drawing 1 , and shows an example of the mode which auxiliary elastic member 21B which is crossing the core 4 joins to the inside of the rear-face sheet 3. Each of both ends of elastic member 21B elongated uniformly crosswise [of a diaper 1] have joined to the inside of the rear-face sheet 3 by a diagram in the joining region 9, and also the part between this edge and the side edge 23 of a core 4 has joined member 21B to the inside of the rear-face sheet 3 through hot melt adhesive 25. When the front rear-face sheets 2 and 3 join mutually through hot melt adhesive 13 in the side edge section of a diaper 1, an elastic member 21 will also be joined to the inside of the surface sheet 2 through adhesives 13.

[0019] the circumference regions 6 and 7 of a drum before and after overlapping in the joining region 9 -- heating pressurization is carried out and each front rear-face sheet 2 and 3 welds. When it is what the auxiliary elastic member 21 joins to the rear-face sheet 3 only in the joining region 9, it is desirable to choose the material so that a member 21 may rear-face weld [the surface sheet 2 and / 3]. For example, melting temperature uses the elastomer made of thermoplastic synthetic resin near the melting temperature of the front rear-face sheets 2 and 3.

[0020] Although a core 4 is pressed from an outside, a wearer is stuck and there is no constraint in thickness, as for the auxiliary elastic member 21, it is [width of face] desirable that it is 3-20mm. As for total of the expanding stress of a member 21, it is desirable that a gar rhe stiffness criterion is 100-230gf to the core 4 which are 0.5-2g. When a member 21 has width of face smaller than 3mm, it eats into the tissue paper (not shown) which forms the front face of a core 4, the organization is divided, and the body fluid diffusion function of tissue paper may be reduced. That width of face becomes large and the amount of a member 21 of the member 21 used increases although width of face exceeds 20mm will cause the unnecessary rise of the cost of materials.

[0021] Thus, it is easy to make a wearer stick a core 4 by contraction of the auxiliary elastic member 21 in the constituted diaper 1. Even if it contracts, neither these rear-faces sheet 3 nor a core 4 is made to produce a ripple, since the auxiliary elastic member 21 which crosses a core 4 has not joined to the rear-face sheet 3 and a core 4 in the part to cross. So, if the flat core 4 is used for this diaper 1, it may stick to a wearer in the form where a core 4 is as it is. Moreover, the rear-face sheet 3 without a ripple does not have the ripple (gathers) of a circumference region of a drum like the diaper of a publication in said conventional technique, for example, JP,7-44945,B, and a smooth feel can be given when a hand is touched.

[0022] Drawing 3 is the same drawing as drawing 2 which shows an example of the embodiment of a diaper 1. In the diaper 1 in this case, the side edge section of the front rear-face sheets 2 and 3 has joined

mutually only in the joining region 9 rather than joined through hot melt adhesive 13. Auxiliary elastic member 21B is joined to the inside of the rear-face sheet 3 through adhesives 25.

[0023] Drawing 4 is the enlarged drawing of the part IV surrounded by the imaginary line of drawing 1. A list and auxiliary elastic member 21C are straddling [the joining region 9 formed in the side edge section of a diaper 1] in the vertical direction intermittently in two joining regions 9. If the width of face of member 21C is wide, it is possible to join to a diaper 1 in this way in two or more joining regions 9.

[0024] Drawing 5 and 6 are the same drawing as drawing 1 which shows an example of the embodiment of this invention, and its VI-VI line view Fig. The rear-face sheet 3 is constituted from this diaper 1 by the film 5 of non-liquid-permeable nature made from thermoplastic synthetic resin, and the nonwoven fabric 26 made from a thermoplastic synthetic fiber which covers the whole external surface of a film 5. The surface sheet 2 and the film 5 of each other are joined in the periphery section of a diaper 1 like the case of drawing 2. a film 5 and a nonwoven fabric 26 -- the side edge section of a diaper 1, and the circumference opening 11 of a drum and the circumference opening 12 of a foot -- in each periphery section, it has joined mutually through hot melt adhesive 27. Preferably, the film 5 and the nonwoven fabric 26 have joined mutually with hot melt adhesive 27 like illustration also in the lower part of the length-from-the-crotch-to-the-cuff region 8. The film 5 is joined to the length-from-the-crotch-to-the-cuff region 8 of a core 4 through hot melt adhesive 28.

[0025] Drawing 5 and the auxiliary elastic member 21 in 6 were located between the film 5 and the nonwoven fabric 26, and are prolonged in the state of expanding between the edges-on-both-sides sections of a diaper 1. Member 21A located in the topmost part among the auxiliary elastic members 21 covers indirectly about 22 front end edge of a core 4 through a film 5, and the upper limb part 31 of member 21A is located more nearly up than the front end edge 22 of a core 4 (refer to drawing 6). This member 21A can suppress bending backward so that about 22 front end edge of a core 4 may separate from a wearer's body toward the outside of a diaper 1, when a diaper 1 is worn. Member 21E of the auxiliary elastic members 21 is prolonged crosswise [of a diaper 1] in the downward length-from-the-crotch-to-the-cuff region 8 rather than the circumference region 6 of a forward fuselage assembly of a diaper 1. In the diaper 1 in this case, a large area of a core 4 can be stuck in the body by member 21A or 21E.

[0026] The part prolonged to the method of outside has joined the auxiliary elastic member 21 shown in drawing 5 from the side edge 23 of a core 4 to the external surface of a film 5 through hot melt adhesive 27. A member 21 can do so the same effectiveness as the time of having joined to the film 5, even if it did not join to a film 5 in this way but has joined to the nonwoven fabric 26 through different adhesives from adhesives 27 or this.

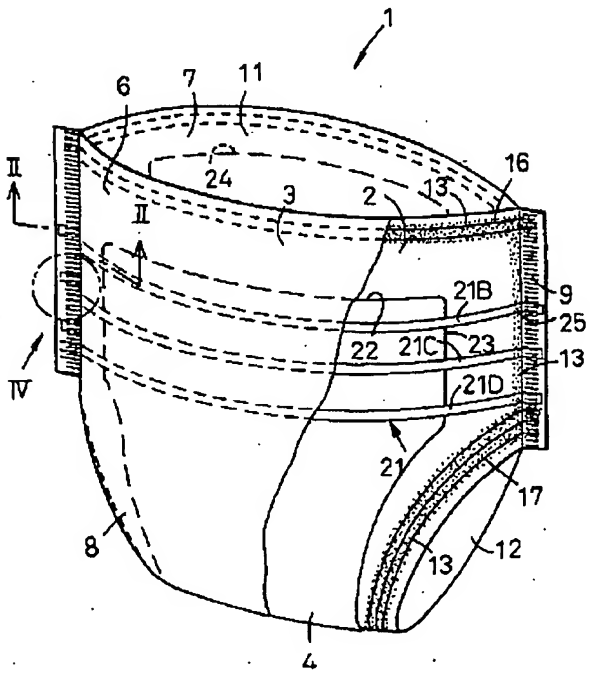
[0027] In the disposable diaper concerning this invention, liquid permeability puncturing plastic film etc. can be used for the surface sheet 2 other than a nonwoven fabric. With hot melt adhesive, a core 4 can be joined to the surface sheet 2, and can be joined to the rear-face sheet 3 also except length-from-the-crotch-to-the-cuff region 8. If a diaper 1 is the mode of drawing 1, it can also cover near the front end edge 22 of a core 4, and/or the back end edge 24 directly by the auxiliary elastic member 21. In order to join each part material, adhesives, such as hot melt adhesive, are used, and also techniques, such as heating joining and ultrasonic welding, can be used.

[0028]

[Effect of the Invention] In the disposable diaper of the trousers mold concerning this invention, while it is hard to produce a ripple to a rear-face sheet or a core and a core sticks to them well in the body even if this member contracts since the auxiliary elastic member which crosses an absorptivity core has dissociated to a rear-face sheet and a core in that part to cross, the feel of a rear-face sheet becomes smooth.

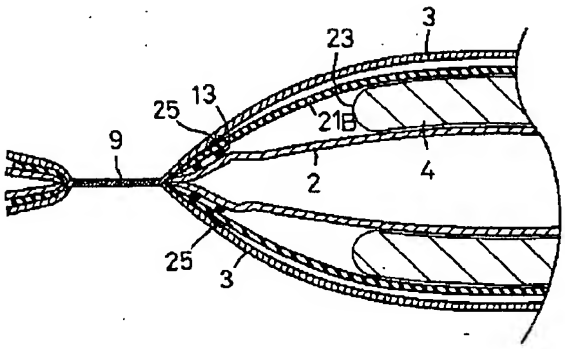
[Translation done.]

Drawing selection drawing 1



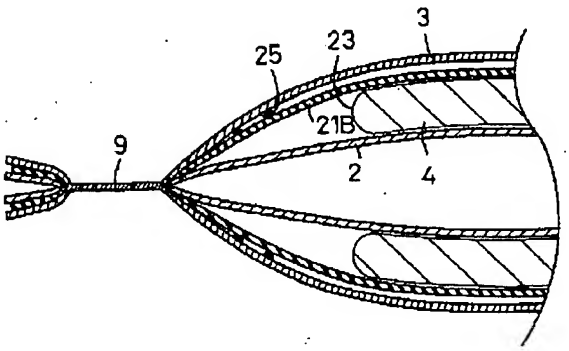
[Translation done.]

Drawing selection drawing 2



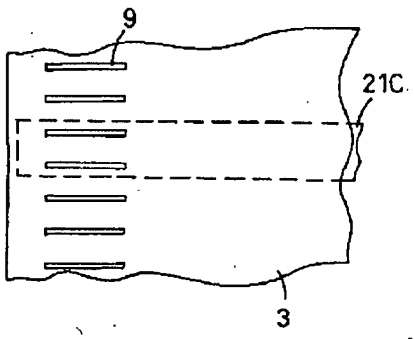
[Translation done.]

Drawing selection drawing 3



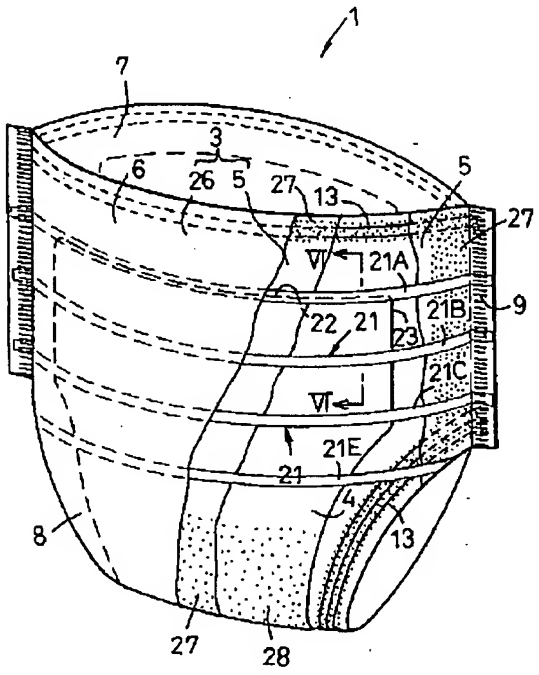
[Translation done.]

Drawing selection drawing 4



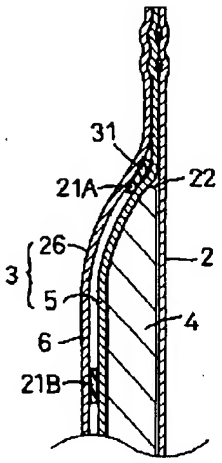
[Translation done.]

Drawing selection drawing 5



[Translation done.]

Drawing selection drawing 6



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